

Patent Claims

1. A device (1) for the measurement of gas flows with a gas channel (3),
with sensors (5), (6), (7), (8), (9), (10) arranged therein, the gas
channel (3) being in the form of a compact block and groups of different
sensors (5-10) with different measured values or measuring ranges
being integrated without tubes directly in the gas channel and being
installed in such a way that both humid and dry gases can be
measured, and a computer or microcontroller (11) being provided, and,
in the operating state, the individual measured values of the different
sensors being compared with one another by the computer so that a
consolidated (i.e. resultant) measured value can be specified from the
individual measured values, wherein two groups of sensors are
provided, on the one hand pressure sensors for measurement of the
pressure difference across a measuring resistance arranged in the gas
channel (3) and in the form of a sieve (4), of the absolute or ambient
pressure and of the relative pressure in the gas channel, and, on the
other hand, sensors for measurement of the humidity, temperature and
oxygen concentration, and the microcontroller (11) is provided with
program parameters for calculating the gas flow which take into
account the environmental influences determined by the individual
sensors, such as, in particular, humidity, ambient pressure,
temperature and oxygen concentration, and relative pressure in the gas
channel, so that the interfering effect of the environmental conditions
on the measured values is compensated.
2. The device as claimed in claim 1, wherein the sensors (5-10) are
screwed into the block from outside and can be removed therefrom or
changed.
3. The device (1) as claimed in claim 1 or 2, wherein the gas channel (3)
and the measuring resistance or the sieve (4) are designed in such a
way that a laminar gas flow results in both directions of flow and hence

bidirectional gas measurement without influencing of the measured value is possible.

- 5 4. The device (1) as claimed in any of the preceding claims, wherein a direct access knob (DAK) for direct access to help and measured values exists on a front panel of the device, preferably adjacent to the gas channel (3).
- 10 5. The device as claimed in claim 4, wherein the direct access knob triggers a display or the delivery of actual values of different – optionally selectable – parameters to a display.